

CLAIMS:

1. A conduit threading device for passing a pull-cord (24) through a conduit by imposing a negative pressure on a leading end of a shuttle (16) having a zone of maximum diameter that is commensurate with the internal diameter of the conduit and attachment means (23) for the attachment of a pull-cord to the shuttle so that suction applied to a target end of a conduit operatively draws the shuttle and attached pull-cord through the conduit, the conduit threading device being characterised in that it includes a positive displacement pump (1) having a suction inlet (14) configured for releasable attachment to an end of a conduit and in that there is interposed between the pump and suction inlet a separate collection chamber (9) for solids and liquids drawn into the suction inlet during use.
2. A conduit threading device as claimed in claim 1 in which the positive displacement pump is a manually operable pump having a vertically movable piston and cylinder assembly.
3. A conduit threading device as claimed in claim 2 in which the pump has a volumetric displacement of from 1 to 4 litres (about 2 to about 8½ pints).
4. A conduit threading device as claimed in any one of the preceding claims in which a suction inlet (12), and a suction outlet (11) from, the collection chamber both terminate at a position elevated from a bottom of the collection chamber.
5. A conduit threading device as claimed in any one of the preceding claims in which the suction outlet from the collection chamber to the pump has filter means (11) associated with it to prevent dirt becoming entrapped with air drawn into the pump.

6. A conduit threading device as claimed in any one of the preceding claims in which the suction inlet is a free end (14) of a flexible suction pipe (13) connected at its other end to the collection chamber.
- 5 7. A conduit threading device as claimed in any one of the preceding claims in which the conduit threading device includes a selection of different adapters (26, 27) for selective cooperation with the suction inlet according to the size and orientation of an open end (31a, 31b) of a conduit in relation to which the device is to be used.
- 10 8. A conduit threading device as claimed in any one of the preceding claims in which the device includes a shuttle (16) having an operatively leading and trailing section and wherein the trailing section has said zone of maximum diameter that is commensurate with the internal diameter of the conduit and wherein the shuttle comprises a generally bell-shaped, somewhat resiliently flexible substantially non-expandable body (18) with a rigid or semi-rigid attachment member (19) extending longitudinally through its length with the attachment means (21, 23) at its operatively trailing end and an integral generally part-spherical or ellipsoidal guide element (21) at its leading end.
- 15 9. A conduit threading device as claimed in any one of the preceding claims in which the pull-cord comprises a nylon, polypropylene or other suitably strong and light weight string stored in a coreless roll (25) form for unwinding by withdrawing the string generally axially from the centre of the roll with the string having a weight of about one half to two grams per metre, typically about one gram per metre.
- 20 10. A method of threading a pull-cord through a conduit comprising applying suction to one end of the conduit utilising a conduit threading device as claimed in any one of claims 1 to 9 with a shuttle installed at
- 25
- 30

the opposite end of said conduit and having an end of a pull-cord attached thereto.

5

10

15

20

25

30